

- 20 -

HIGH-RESOLUTION GAS GAUGE PROXIMITY SENSOR**ABSTRACT OF THE DISCLOSURE**

A system and method for precisely detecting very small distances between a measurement probe having an elongated nozzle with a relatively long and thin orifice. The proximity sensor uses a constant gas flow and senses a mass flow rate within a pneumatic bridge to detect very small distances. The system and method use a flow restrictor and/or snubber made of porous material and/or a mass flow rate controller that in various combinations allow for detection of very small distances in the nanometer to sub-nanometer range.

148708.1